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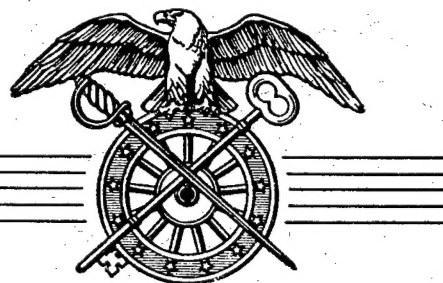
ENVIRONMENTAL PROTECTION BRANCH

CLOTHING ALMANAC NO. 20

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CENTRAL AFRICA

20010719 056



Research and Development Division

Office of The Quartermaster General

December 1951

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Department of the Army
OFFICE OF THE QUARTERMASTER GENERAL
Research and Development Division

Environmental Protection Branch

Clothing Almanac No. 20

CENTRAL AFRICA

Washington, D. C.

December 1951

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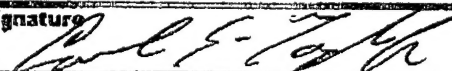
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INTRODUCTION

1. PURPOSE

Clothing Almanacs show monthly requirements for items of military clothing to be used in a particular region. They are intended to aid logistic planners by indicating not only the most suitable military clothing for each month, but also the climatic and geographic conditions which make such clothing suitable. The tables can be used in planning clothing issue and seasonal clothing renovation, in scheduling warehouse operations to make maximum use of critical space, in estimating the probable amounts of use and wear of various items and consequent requirements for their replacement.

a. Distribution. The Almanacs are distributed for guidance to theater, Army, and other commanders responsible for authorizing the issue of discretionary items, and for information to commanders of posts, camps, stations, and divisions or equivalent organizations.

2. DESCRIPTION

Clothing Almanacs supplement T/A 21, which specifies total yearly clothing allowances for each of seven world-wide zones. Each T/A 21 Clothing Allowance Zone is based on the average temperatures of the coldest and warmest months, as shown in Table I. For each zone, T/A 21 lists the items that are required or mandatory. It also lists for each zone the items that are discretionary. (Discretionary items are not required by all personnel within the respective zones, but they are essential to the operating efficiency of certain personnel because of duty assignments which may involve greater exposure to environmental conditions.) Within the framework of T/A 21, Clothing Almanacs show monthly clothing requirements in specific regions, indicating essential items in these regions.

TABLE I: CLOTHING ALLOWANCE ZONES OF T/A 21

<u>Zone</u>	<u>Average Temperature (°F) of</u>	
	<u>Coldest Month</u>	<u>Warmest Month</u>
I Tropical	Above 68 . . .	Above 68
II Semitropical	50 to 68 . . .	Above 68
III Warm Temperate	32 to 50 . . .	Above 68
IV Mild Temperate	32 to 50 . . .	50 to 68
V Cool Temperate	Below 32 . . .	Above 68
VI Cold Temperate	14 to 32 . . .	50 to 68
VII Arctic	Below 14 . . .	Below 68

a. Basis. Clothing Almanacs are based on a detailed study of local environmental conditions. Each Almanac specifies the clothing most likely to be needed by troops for adequate protection against these conditions during round-the-clock operations. Of primary concern in preparing an Almanac is the amount and kind of clothing needed by a soldier in the field while his activity is relatively light. During the strenuous activity, troops need less clothing; when completely at rest, they require more to remain comfortable. Clothing Almanacs show the items that will give troops adequate protection for at least 90 percent of the time, and in an average year any particular item can be expected to be used at least 30 percent of the time during the months specified.

b. Regions. Clothing Almanacs are issued for particular regions (e.g., Canada, Central Europe, Southwest Asia, etc.), which may include parts of two or more T/A 21 Clothing Allowance Zones. Each Clothing Almanac Region is further subdivided into a number of Clothing Requirement Areas, according to differences in monthly clothing requirements. Although all Clothing Requirement Areas within any one of the T/A 21 Clothing Allowance Zones have the same basic annual clothing allowances, they differ in monthly clothing needs.

(1) Clothing Requirement Areas are of two types, nonmountainous and mountainous. The latter are given a special designation to indicate that field conditions and, consequently, clothing requirements may change rapidly within a relatively short horizontal distance. The mountainous areas are divided into elevation intervals, each of which has different clothing needs. Thus, in effect, each interval represents a Clothing Requirement Area and clothing needs of troops operating within mountains can be determined for any elevation.

(2) Each Clothing Requirement Area is assigned an identifying symbol. Nonmountainous areas are designated by Roman numerals of Clothing Zones in which they occur, together with an identifying letter (e.g., II-A). Mountainous areas are designated by the Roman numerals of the Clothing Allowance Zones of their lowest elevations, together with an identifying number (e.g., II-1). Although Clothing Requirement Areas in different Clothing Almanacs may have identical designations, they do not necessarily have the same environmental conditions or monthly clothing requirements. For example, monthly clothing requirements in Central Africa II-A are not the same as those in Southwest Asia II-A.

c. Map. Clothing Requirement Areas of the Region are shown on a map in the back of the Almanac. Distinctive boundaries separate Clothing Allowance Zones; single-line boundaries separate the individual Clothing Requirement Areas. Each area is numbered according to the system outlined above.

d. Tables. For each Clothing Requirement Area or mountain elevation interval there is a table in the Clothing Almanac. Months are shown along the top, and the clothing items are listed on the left-hand side of the page. Need for an item is shown by a solid bar drawn opposite the item and in the proper month-column. The absence of such a bar means that the item is not needed in that month. For each mountain interval, elevations in feet above sea level are given at the top of the page.

e. New Items. All items listed in the clothing tables are authorized in T/A 21, Mobilization, 27 Jan 50, for the respective zones. As improvements are made and new items are standardized, they automatically replace the older ones in the tables as well as in requisitions. Upon standardization of completely new items, which are not simply improvements but are so different as not to be comparable to older items, special instructions for their use will be furnished in official Quartermaster publication.

f. Items Listed. In the tables, the clothing items have been grouped and arranged alphabetically under the headings of Body Clothing, Footgear, Handgear, Headgear, and Sleeping Equipment. For many items, model numbers, shade numbers, etc., have been eliminated to conserve space.

(1) Both discretionary and mandatory items are included in the tables. Discretionary items are indicated by an asterisk (*). In some mountainous areas, a few items are listed in accordance with T/A 21 Mbl, par. 3e, which provides that "in rugged terrain commanders may, at their discretion, authorize the allowance proper for the next colder zone than that in which the area falls."

(2) No requirements are shown for specialized equipment, such as that for low-mountain and alpine areas, (T/A 21, Part III, Section II) which may be authorized by the commanding general, theater of operations, or by the Department of the Army for individuals undergoing special training in continental United States. (Boots, ski-mountain are considered specialized).

(3) Certain items which are mandatory throughout the world, such as Drawers, cotton and Belt, waist are not included in the Clothing Requirements Tables, but are included in summary tables.

(4) Also excluded are items in the nature of equipment rather than clothing; insignia, toilet articles, knives, snowshoes, tents, steel helmets, etc.

(5) Under the heading "Anti-Insect" need is indicated for: Gloves, mosquito, Headnet, mosquito, Bar, insect, field, and Repellent, insect.



Fig. 1: A diversity of clothing items is needed in the open grasslands and scrub forests of the Southern Rhodesia uplands (Area II-3).

Fig. 2: Scattered through the woodland savanna are thickets of tangled brush and vines which impede movement and cause excessive wear and tear on clothing.



RESTRICTED-SECURITY INFORMATION

CLOTHING ALMANAC FOR CENTRAL AFRICA

1. GENERAL.

Clothing needs in Central Africa are closely related to contrasts in elevation. Fully one-half the region is classified mountainous, and clothing recommendations necessarily are correspondingly diverse. Nevertheless, a general year-round atmosphere of warmth prevails, and, high mountains excepted, the need for lightweight clothing is region-wide. Only in those portions farthest removed from the equator is climatic seasonality pronounced enough to require a corresponding change to warmer clothing and, even then, recommended clothing has but little more insulation value than that replaced.

As delineated on the folding map in the back, the Central Africa Clothing Almanac Region lies astride and chiefly to the south of the equator -- ranging in its extremities from 8° N. Lat. to 27° S. Lat. Of the numerous political divisions included within the region, Angola, Mozambique, Belgian Congo, Tanganyika, Northern and Southern Rhodesia, Madagascar, and the French Cameroons comprise the bulk of the total area. (For a precise listing of the political division of the mainland and the adjacent islands, see Table II.) The region is about as large as continental United States.

Primarily due to low latitude, the region lies entirely within the two warmest Clothing Allowance Zones of T/A 21: Zones I and II. Within these zones, clothing requirements vary with areal differences in climate and surface conditions, and, consequently, the region has been divided into six (6) Clothing Requirement Areas, of which four (4) are mountainous. The effect of altitude is recognized within each of the mountain Areas by a zonation of increasing clothing insulation with elevation.

2. THE LAND SURFACE.

The mainland portion of Central Africa includes the Congo Basin and surrounding tableland. High mountains rise above the tableland east and south of the Basin. With the exception of the two coastal plains, most of the region is above 1,000 feet; two-thirds of it is above 3,000 feet, and extensive tracts are roughly one mile above sea level.

Prerequisite to understanding the clothing requirements of this region is the recognition of the mountainous and nonmountainous classifications. In the latter, clothing needs differ from one area to another primarily as a result of climatic changes with changing latitude; in the former, coupled with the latitudinal effect, are the climatic changes resulting from differences in elevation. In two

TABLE II: POLITICAL DIVISIONS OF CENTRAL AFRICA

<u>Political Division</u>	<u>Area Sq. Mi.</u>	<u>Administrated By</u>	<u>Type</u>
Angola	481,226	Portugal	Colony
Ascension Is.	34	Great Britain	Adm. fr. St. Helena
Belgian Congo	904,757	Belgium	Colony
Cabinda	3,000	Portugal	Enclave attchd. to Angola
Comora Islands	790	France	Attachd. to Madagascar
Gabon	93,218	France	Territory
Guinea Spanish	10,036	Spain	Colony
Madagascar	241,094	France	Territory
Mauritius (Rodrigues)	40	Great Britain	Colony
Middle Congo	166,069	France	Territory
Mozambique	297,731	Portugal	Territory
Northern Rhodesia	287,640	Great Britain	Territory
Nyasaland	47,404	Great Britain	Protectorate with Zanzibar
Pemba Is.	380	Great Britain	Protectorate
Reunion Is.	969	France	Overseas Department
Ruanda and Urundi	20,535	Belgium	League of Nations Mandate
St. Helena	47	Great Britain	Crown Colony
Sao Tome	372	Portugal	Colony
Seychelles (92 Is.)	156	Great Britain	Crown Colony
Southern Rhodesia	150,333	Great Britain	Self-Governing Colony
Zanzibar Is.	640	Great Britain	Protectorate

extensive sections of this region (Areas I-A and II-A) relief is not sufficiently high to produce significant climatic changes and clothing recommendations are applicable to all levels. Each of the four mountain Areas (Area I-1, II-1, II-2, and II-3) is varied enough in relief to warrant the recognition of three elevation intervals of different clothing insulation values.

a. Mountain Areas. The four mountain Areas constitute more than one-half of the total extent of the region. The highest terrain is associated with the Ruwenzori Mountains located to the west of Lake Victoria where peaks attain elevations over 16,000 feet. Southwest of the lake district the summit level decreases. In Angola (Area II-1) peaks above 6,500 feet are uncommon. In Madagascar, mountain development is greatest south of Tananarive where a series of peaks are between 5,000 and 8,500 feet; in the north, a compact mountain mass rises even higher.

Fig. 3: All available means for defense against insects are needed in Central Africa.



Of great significance within the mountain classification are the broad expanses of level to rolling terrain on which most military operations would be conducted. The clothing requirements for most of the intermontane plateaus are shown on the table for the second clothing interval of each mountain Area. However, in some instances, the lowest level is of greatest significance, such as the lowest level of Area II-2 which indicates recommendations for the great rift valleys of the region.

Rift valleys are peculiar topographic features of the eastern half of Central Africa. They form long trenches through the mountains and are 2,000 to 5,000 feet lower than the surrounding uplands. In some cases, these valleys have been filled with water and form elongated lakes forty to fifty miles wide and several hundred miles long. The largest of these is Lake Tanganyika; smaller lakes are Nyasa, Kivu, Edward, and Albert.

The vegetation of the mountains is extremely varied ranging from seasonally dry grassy areas near the base, through dense mountain rain forests near the zone of heaviest rainfall (about 8,000 feet elevation), to the mosses and lichens of the otherwise bare ground just below the snow line of the Ruwenzori Mountains. The most extensive and characteristic type, however, is a tall-grass cover interrupted by clumps of trees (Fig. 1). Depending upon the season of the year, this tall grass can be not only a hindrance to vision and movement (as it is often 5 to 12 feet high) but also can cause excessive wear and tear on clothing.

b. Nonmountainous Areas. Both Areas I-A and II-A are examples of districts in which clothing requirements are not materially affected by local changes in elevation; nevertheless, insofar as clothing is concerned, they are readily differentiated from each other.

Together, eastern Angola and the greater part of Northern Rhodesia (Area II-A) form the only extensive nonmountainous tableland in the region. Many of the streams crossing the Area are intermittent, flowing only during the wet season. Termite hills, twenty to thirty feet high, are spaced irregularly through the woodland savanna. Overland travel is not difficult in the dry season, but may be hampered during the wet season when sections of western Northern Rhodesia are subject to severe flooding. Most of the Area is a savanna landscape, with tall grass and clumps of trees (Fig. 2) the characteristic vegetation. The trees lose their leaves in the dry season, but new foliage returns immediately with the onset of the rainy season. The leaves first are red to purplish in hue, but soon turn green and become leatherlike in character. The termite hills are notable in that they retain their green vegetation throughout the year.

In contrast to the grassland plains of Area II-A, the Congo Basin (Area I-A) is a region of tropical rainforest. The Congo is the most extensive lowland of the region. Characteristically, it has little relief, many streams, luxuriant vegetation and constantly warm, humid climate. The Congo serves as the drainage basin for the uplands to the east and south. Dense broad-leaf evergreen forests with thick underbrush are the characteristic vegetation along all streams and rivers within the basin. These river forests extend beyond the limits of the rainforest into the adjacent savanna tract.

The eastern coastal plain from Zanzibar to southern Mozambique is very similar to the Congo Basin in temperature, swampy land, and insect problems, though mostly grassy rather than forested. Conversely, that portion of the coast north of Zanzibar is dry and semi-desert by nature, and resembles more closely the savanna tablelands of eastern Angola and Northern Rhodesia.

3. CLIMATE AND CLOTHING.

Clothing diversity within Central Africa is governed largely by altitudinal variation. As in all tropical regions, warmth and a notable lack of temperature seasonality feature the climate of the region. Nearly everywhere, the change in temperature from day to night is more pronounced than seasonal change, and clothing suitable for wear for any one month is equally suitable during the others. Only in portions of Zone II is seasonal change great enough to require a winter change to warmer clothing. The "winters", however, are mild, and may be more properly described as cool rather than cold. Cool weather is likewise characteristic

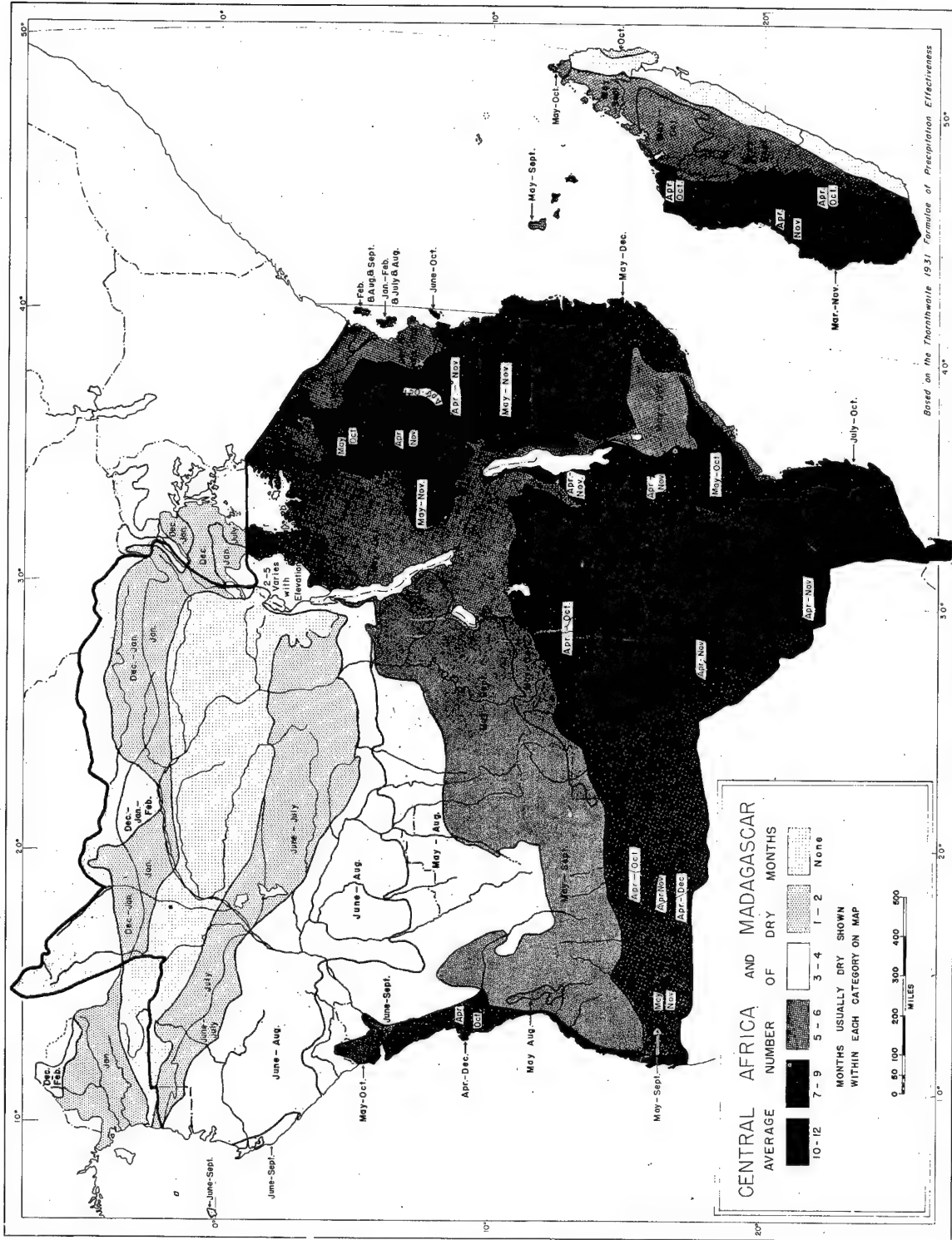


Figure 4

Environmental Protection Branch, Research & Development Division, OOMG

of equatorial climates wherever elevation is great enough to effect the necessary lower temperatures, and large sections of all mountain areas experience the pleasant conditions of Zone II winters.

a. Warm Weather Clothing. During all months when mean temperatures are above 68°F, there is need for lightweight clothing and ventilated, self-draining footgear — region-wide requirements in Central Africa. In all Zone I Areas, upper mountain levels excepted, Warm Weather clothing is needed throughout the year (Table V). In Zone II, the seasonal requirement for lightweight clothing ranges from eight to nine months in the nonmountainous areas, to four to six months at the lower and intermediate levels of the mountainous areas.

Contrary to the widely accepted concept that equatorial location implies constant high humidity, only the Congo Basin (Area I-A), the east coast of Madagascar (Area I-1), and certain other tropical islands (Area I-A) could be so classified. Seasonal drought, becoming more pronounced away from the equator, is characteristic of all other Areas of the region. (Fig. 4)

The districts of heavy rains experience sticky, uncomfortable weather conditions. The daily range in temperature averages between 10 and 20 F°, several times the annual range. Afternoon temperatures are generally between 85 and 95°F; night and early morning temperatures rarely fall below 65°F. Rainfall is abundant, usually more than 40 inches per year and, in places, several times that amount. There is no dry season, rather, wet and less wet seasons. Most precipitation falls in heavy showers during late afternoon or early morning.

The field uniform for use in the wet tropics is composed primarily of Undershirt and Drawers, cotton, od, Jacket and Trousers, lightweight, Shirt, knit, od, Cap, herringbone twill, and Boots, combat, tropical. In use, this uniform is subject to several precautions. The rapid growth of fungi and molds upon materials, especially leather, may cause rapid deterioration. The rate of wear and tear upon clothing in forested areas is high, especially along rivers where vegetation is thick; consequently, the clothing replacement problem may be acute. Desire for unhampered movement may cause the soldier to discard certain items such as the knit shirt or the wool blanket. Though such equipment may not be needed during the day or while on the move, there are times, at night or at rest, when they are essential to the comfort and health of the soldier. Excessive perspiration will require frequent clothing changes, and laundering problems may be complicated by difficulty in drying. Tropical boots are ventilated and are the best footgear available to insure proper foot health; however, the ground is generally wet, and attempts should be made to keep footgear dry and to change socks frequently.

In general, wet-tropical weather is oppressive to the individual. Personnel are likely to suffer from heat exhaustion and prickly heat. Care should be exercised to minimize exposure to the sun and to curtail strenuous operations during the heat of the day. Wounds are slow to heal in the tropics, and should be given medical attention immediately.

In the districts of seasonal drought, rainfall averages anywhere from 10 to 60 inches per year, and, with the exception of certain sections of double rainfall maxima, falls for the most part during the warmest months. The Victoria Basin (Area II-2) and the coastal district of Tanganyika (Area I-A), are notably dry. During hot-dry weather, the diurnal temperature range averages about 15 to 30 F°, but may be as great as 40 F°. Afternoon temperatures generally exceed 90°F and sometimes 100°F. Night and early morning temperatures average 70 to 75°F, but may drop below 60°F.

The field uniform for use during hot-dry weather is essentially the same as that for the wet-tropics. The raincoat, however, is generally not necessary. The effect of hot-dry weather upon clothing differs considerably from wet-tropical weather. Boot replacement may be quite high owing to the abrasive nature of the dry soils. Ground temperatures during the heat of the day are often 20 to 50 F° higher than air temperatures, and the use of ventilating insoles will measurably increase foot comfort. Supplemental items of utility to the soldier operating in these semi-desert or grassland areas are a face or neck cloth to protect against blowing dust and sand, and sun glasses to protect against optical haze and glare.

Excessive exposure to the sun should be avoided, as heat exhaustion, sunstroke, and sunburn are constant threats to the individual. During the warmest hours, newly-arrived troops should avoid unnecessary physical exertion.

A slight variation in the composition of the warm weather uniform is recommended for the coastal district of Angola (Area II-1, below 3,000 feet). Essentially this coast is dry, but during winter, thick fogs are a frequent weather phenomenon. The Jacket, field is recommended for supplementary issue, June to September, for wear during occurrence of these cold fogs.

b. Cool Weather Clothing. When mean monthly temperatures drop below 68°F, the lightweight garments of the Warm Weather uniform are replaced by clothing of greater insulation value (Table VI). A uniform which contains woolen insulation provides suitable protection when mean temperatures are between 50 and 68°F. This Cool Weather uniform consists of Shirt, flannel, od, Trousers, field, wool, od, Trousers, field, cotton, od, Jacket, field, Sweater, high neck, Boots, service, combat, russet, and accessory items.

Cool weather is confined almost entirely to mountainous areas. In equatorial latitudes the cool weather zone is encountered at relatively high elevations. In the Ruwenzori Mountains (Area II-1), for example, cool weather prevails throughout the year at all elevations between 4,500 to 10,000 feet. Farther south the effect of latitude becomes apparent, and cool weather clothing is needed during winter (generally May through August) in the interior tablelands of Angola and Northern Rhodesia (Area II-A), and at the lowest level (below 2,000 feet) in the mountains of Mozambique and Southern Rhodesia (Area II-3). In these southern mountains, the length of the cool season increases with increasing elevation, and from April through September cool weather clothing is necessary at levels between 2,000 and 5,000 feet; above 5,000 feet cool weather predominates throughout the year.

Within the mountainous Areas, certain peaks are high enough to promote temperature conditions well below the recommended range for cool weather clothing use. The snow clad peaks of the Ruwenzori Mountains, where mean monthly temperatures are all below freezing, are notable in this respect. No clothing recommendations have been made for such isolated peaks. Rather, the clothing listed will provide adequate protection against average conditions likely to be encountered during movement through the area. Clothing needs are shown for elevation intervals up to and including the interval containing the highest pass significant for troop movement. Above this level (6,000 feet in some areas, 10,000 feet in others) all ground operations are essentially mountaineering, and specially trained, clothed, and equipped troops are needed.

TABLE III: CLIMATIC DATA FOR SELECTED STATIONS IN CENTRAL AFRICA
(Temperatures in °F;
Rainfall in inches;
Elevation in feet)

<u>STATION, ELEV. & AREA</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
BARUMBU (1377) I-A Belgian Congo	77 2.4	77 4.5	78 6.0	78 6.8	78 6.2	77 5.0	76 6.7	76 8.1	77 7.0	76 8.2	76 7.0	76 3.7
TANANARIVE (4500) I-1 Madagascar	70 10.9	70 11.3	70 7.7	68 2.5	64 0.5	60 0.4	58 0.4	60 0.4	63 0.3	67 2.2	70 5.2	70 11.9
LUSAKA (4191) II-A N. Rhodesia	71 9.0	71 7.4	70 5.6	69 0.7	65 0.0	61 0.0	61 0.0	65 0.0	71 0.0	76 0.4	74 3.6	71 6.0
BULAWAYO (4440) II-3 S. Rhodesia	71 5.6	70 3.9	68 3.3	66 1.7	61 0.3	57 0.0	57 0.1	60 0.0	67 0.1	72 0.7	72 3.2	72 5.0

4. INSECTS AND OTHER FAUNA.

While large animals (gorilla, rhinoceros, elephant, lion, etc.) and snakes are easily the most spectacular and feared of the fauna within the region, the host of flying, crawling, and stinging insects is by far the most dangerous and widespread threat to the health and comfort of the individual soldier (Fig. 3). The widest variety of insect life abounds within Central Africa. The ant, mosquito, tsetse fly, spider, scorpion, centipede, and millepede are found in endless numbers and varieties. Only the highest mountain terrain is not subject, either the entire year or for the greater part of the year, to the presence of human-feeding insects.

Although some insects are simply obnoxious in that their bite or sting may cause momentary discomfort, a great number are carriers of diseases, such as sleeping sickness and malaria. Of all the above-listed insects, tsetse flies and mosquitoes are certainly the most dangerous, and possibly the most numerous. The warm, humid climate and abundance of water afford mosquitoes ideal breeding habitats.

Much relief is gained with the changing of seasons from wet to dry, or from moving from low to high elevations. However, the individual soldier must at all times be prepared to protect himself against the dangers of the insect world through the proper use of anti-insect items. Aside from these items, the common practice of proper dress to shield the body from attack should be emphasized.

Special instruction in the care and use of anti-insect equipment should be emphasized in the wet and warm lowland districts. The ant has an affinity for all leather goods (shoes, luggage, camera covers, etc.), and makes advisable the use of metal containers and foot lockers. The termite will attack any unprotected items made of cellulose, especially when stored on the ground.

5. CLOTHING SUMMARY.

Clothing needs for Central Africa, discussed in part in preceding sections, are shown in detail, item by item and month by month, in the Clothing Requirements Tables at the end of this Almanac. For convenience, they may be summarized in two groups, each suitable for wear in areas where the average monthly temperatures are generally between certain values:

WARM Weather Clothing, above 68°F

COOL Weather Clothing, between 50 and 68°F

TABLE IV: CLOTHING REQUIREMENTS SUMMARY FOR CENTRAL AFRICA

(Areas shown on map in back; clothing items composing Warm, and Cool groups listed in following tables)

AREA (Feet)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
I-A - - - - -						WARM						
I-1 below 2,000						WARM						
2,000-5,000		WARM				COOL					WARM	
5,000-8,000						COOL						
II-A - - - - -		WARM				COOL				WARM		
II-1 below 3,000						WARM						
3,000-6,000		WARM				COOL					WARM	
above 6,000						COOL						
II-2 below 4,500						WARM						
4,500-10,000						COOL						
II-3 below 2,000			WARM			COOL				WARM		
2,000-5,000		WARM				COOL					WARM	
above 5,000						COOL						

TABLE V: WARM WEATHER CLOTHING FOR CENTRAL AFRICA
(Average Monthly Temperature Above 68°F)

CLASS A, B, & C TROOPS	WEAR	SPACE
Undershirt & Drawers, cotton, od	1	2
Shirt, knit, od	1	-
Jacket & Trousers, lightweight	1	1
Belt, waist, web	1	-
Poncho, lightweight, od	1	-
Cap, herringbone twill	1	-
Helmet, steel, complete	1	-
Socks, wool, cushion sole	1	2
Boots, combat, tropical	1	1
Insoles, ventilating	1	-
Blanket, lightweight, od	1	-
Anti-insect	1	-
CLASS D & E TROOPS -- The same as for A, B, & C Troops, except for the following substitutions or additions:		
Shirt & Trousers, cotton, khaki	1	2
Raincoat (in lieu of Poncho).	1	-
Blanket, wool, od	1	-

TABLE VI: COOL WEATHER CLOTHING FOR CENTRAL AFRICA
(Average Monthly Temperatures between 50 and 68°F)

<u>CLASS A, B, & C TROOPS</u>	<u>WEAR</u>	<u>SPARE</u>
Undershirt & Drawers, cotton, od	1	2
Shirt, flannel, od	1	1
Trousers, field, wool, od	1	1
Trousers, field, cotton, od	1	-
Suspenders, trousers	1	-
Sweater, high neck	1	-
Jacket, field	1	-
Poncho, lightweight, od	1	-
Cap, herringbone twill	1	-
Helmet, steel, complete	1	-
Hood, jacket & overcoat.	1	-
Boots, service, combat, russet	1	-
Boots, knee-wader (for special troops in wet areas). . .	1	-
Socks, wool, cushion sole.	1	2
Blanket, wool, od	1	1
Anti-insect	1	-

CLASS D & E TROOPS -- The same as for A, B, and C Troops, except for the following substitutions or additions:

Raincoat (in lieu of Poncho)	1	-
Jacket & Trousers, lightweight	1	1
Jacket, wool, od	1	-
Belt, waist, web (with Trousers, lightweight).	1	-

For each Clothing Requirement Area, the months during which each group of clothing items is suitable for wear are indicated in Table IV. The clothing items making up each group (Tables V & VI) are those suitable for simultaneous wear (except as indicated) by troops of Class A, B, and C units (T/A 21, Mbl, part I, par. 2b). These units habitually operate in the forward active combat zone, or in the service area of the combat zone, where housing usually is not provided, and their troops must have clothing suitable for 24-hour living outdoors. In addition, Tables V and VI indicate possible deletions or substitutions of items for use by troops of Class D and E units, whose normal working and living conditions, at airfields and other permanent or semi-permanent installations where housing is provided, are not as rigorous.

Certain items, such as belts, suspenders, and helmets, which are not listed in the Clothing Requirements tables, are shown in the summary tables. In addition, the summary indicates the recommended minimum numbers of each item for each class of troops; glove-liners and socks are listed separately from the gloves or footgear with which they are worn (and with which they are listed in the Clothing Requirements tables) so that the number of spares can be shown.

6. SUPPLEMENTARY ARMY PUBLICATIONS.

The following listed Army publications give valuable information concerning clothing, equipment, and operations, much of which is applicable to Central Africa:

- a. FM 70-10: Mountain Operations. (September 1947). Chapter 1, General Considerations; Chapter 4, Conditioning and Acclimatization; Chapter 6, Weather; and Chapter 7, Winter Characteristics discuss the relationship between the soldier and mountain environment.
- b. FM 31-25: Desert Operations. (March 1942). Section I discusses the general aspects and problems of desert environment. Section II gives a general consideration of the food, clothing and individual equipment needs.
- c. FM 72-20: Jungle Warfare. (October 1944). Of special value are Chapter 1, General Characteristics of the Jungle; Chapter 2, Health, Hygiene and Sanitation; Chapter 3, Jungle Service; Chapter 4, Jungle Operations; Appendix I, Native Plants; and Appendix II, Use of Jungle Machete.
- d. FM 21-15: Individual Clothing and Equipment. (April 1945). Emphasis is placed on the care of clothing and equipment and methods of assembling and packing.
- e. TM 10-228: Fitting of Shoes and Socks. (February 1946). The importance of proper shoe fitting methods, foot measuring equipment and procedure, sock fitting and also correlation, and data for boots and shoes including approved sock combinations, are the more important sections of this manual.
- f. Clothing Almanacs for adjoining regions are:

No. 3	Northeast Africa
No. 8	Northwest Africa
No. 11	East Central Africa

7. CLOTHING REQUIREMENTS TABLES.

The generalizations of Tables IV, V, and VI are convenient for preliminary planning, but for detailed estimates of clothing requirements, the more precise listings of the Clothing Requirements tables should be used. In establishing the requirements as shown in these tables, the normal variations in conditions from year to year have been considered. Nevertheless, the lengths of the seasons may vary so much in certain unusual years that some items may be required for longer or shorter periods than indicated. Since an attempt is made to show clothing needs for troops engaged in most types of activities, the Clothing Requirements tables sometimes indicate need at the same time for items that are not meant to be worn simultaneously. Duplicate items may also be indicated where conditions vary so much locally that no single item will be entirely satisfactory throughout the area.

The 14 tables of clothing requirements for the 6 Clothing Requirement Areas of Central Africa are arranged according to Clothing Allowance Zones, those of Zone I being followed by those of Zone II. Within each Zone, the tables for nonmountainous areas come first, in alphabetical order; the mountain area tables follow in numerical order, with the tables for the lowest elevation of each area followed by those for the upper levels in ascending order.

Areas to which the tables apply are shown on the folding map in the back. For best use of the tables, especially as regards selections from them of clothing items best suited to the individual location and year, the text should be consulted.

All listings in the Clothing Requirements tables, as well as the summary tables, are those authorized by T/A 21 (Mbl) at the time of preparation of this Almanac. Within a few months, however, several of these items gradually will be replaced in supply lines by items recently standardized. Table VII shows several replacement items applicable to Central Africa.

TABLE VII: CLOTHING REPLACEMENT FOR CENTRAL AFRICA
(S means Standard; L, Limited Standard; B, Substitute Standard)

<u>Items in Clothing Almanac</u>	<u>Replacement Items</u>
Shirt, flannel, od (B) . . .) Sweater, high neck (B) . . .)	Shirt, field, wool (S)
Jacket, field (L) w/hood, jacket and overcoat (L)	Jacket, Shell, field, M-1951 (S) w/hood, jacket, M-1951 (S)
Trousers, field, cotton, od (L)	Trouser Shell, field, M-1951 (S)

CLOTHING REQUIREMENTS

CENTRAL AFRICA I-A

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BODY CLOTHING												
* Jacket, field, w/hood, jacket & overcoat												
Jacket & Trousers, lightweight special												
Pencho, lightweight, od												
* Raincoat												
Shirt & Trousers, cotton, khaki												
Shirt, knit, od												
FOOTGEAR												
Boots, combat, tropical; w/1 pr. socks, wool, cushion sole; 1 pr. insoles, ventilating												
* Boots, service, combat, russet, OR Shoes, service; w/1 pr. socks, wool, cushion sole												
HANDGEAR												
None												
HEADGEAR												
Cap, herringbone twill												
* Helmet, sun												
SLEEPING EQUIPMENT												
Blanket, lightweight												
Blanket, wool, od												
OTHER ITEMS												
Anti-insect (See Introduction)												

— Item usually required in this month

* Item usually required in indicated months, but must be procured specially because "discretionary" in this zone.

I 5/25/50

CLOTHING REQUIREMENTS

CENTRAL AFRICA I-I (below 2,000 ft.)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BODY CLOTHING												
* Jacket, field, w/hood, jacket & overcoat.												
Jacket & Trousers, lightweight special												
Poncho, lightweight, od.												
* Raincoat												
Shirt & Trousers, cotton, khaki												
Shirt, knit, od												
FOOTGEAR												
Boots, combat, tropical; w/1 pr. socks, wool, cushion sole; 1 pr. insoles, ventilating												
* Boots, service, combat, russet, OR Shoes, service; w/1 pr. socks, wool, cushion sole												
HANDGEAR												
None												
HEADGEAR												
Cap, herringbone twill												
* Helmet, sun.												
SLEEPING EQUIPMENT												
Blanket, lightweight												
Blanket, wool, od												
OTHER ITEMS												
Anti-insect (See Introduction)												

— Item usually required in this month

I 5/25/50

* Item usually required in indicated months, but must be procured specially because "discretionary" in this zone.

CENTRAL AFRICA I-1 (2,000 to 5,000 ft.)

Anti-insect (See Introduction).

* Item usually required in indicated months, but must be procured specially because "discretionary" in this zone.

17

CENTRAL AFRICA I-1 (5,000 to 8,000 ft.)

[illegible]

* Boots, combat, tropical; w/1 pr. socks, wool, cushion sole; 1 pr. insoles, ventilating

* Boots, knee wader.

Boots, service, combat, russet, OR Shoes, service; w/1 pr. socks, wool, cushion sole

None

Cap, herringbone twill

* Helmet, sun

* Blanket, lightweight.
Blanket, wool, od.

Anti-insect (See Introduction)

* Item usually required in indicated months, but must be procured specially because "discretionary" in this zone.

18

CLOTHING REQUIREMENTS

CENTRAL AFRICA II-A

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BODY CLOTHING												
Jacket, field, w/hood, jacket & overcoat												
* Jacket, wool, od												
Jacket & Trousers, lightweight special.												
Poncho, lightweight, od.												
* Raincoat												
Shirt & Trousers, cotton, khaki.												
* Shirt, flannel, od, & Trousers, field, wool, od												
* Shirt, knit, od.												
* Sweater, high neck												
* Trousers, field, cotton, od												
* Undershirt & Drawers, winter.												
FOOTGEAR												
* Boots, combat, tropical; w/1 pr. socks, wool, cushion sole; 1 pr. insoles, ventilating												
* Boots, knee wader.												
Boots, service, combat, russet, OR Shoes, service; w/1 pr. socks, wool, cushion sole												
HANDGEAR												
None												
HEADGEAR												
Cap, herringbone twill												
* Helmet, sun												
SLEEPING EQUIPMENT												
* Blanket, lightweight.												
Blanket, wool, od.												
OTHER ITEM												
Anti-insect (See Introduction).												

— Item usually required in this month
 * Item usually required in indicated months, but must be procured specially because "discretionary" in this zone.

II 5/25/50

CLOTHING REQUIREMENTS

CENTRAL AFRICA II-1 (below 3,000 ft.)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BODY CLOTHING												
Jacket, field, w/hood, jacket & overcoat.												
* Jacket, wool, od.												
Jacket & Trousers, lightweight special.												
Poncho, lightweight, od.												
* Raincoat												
Shirt & Trousers, cotton, khaki.												
* Shirt, flannel, od, & Trousers, field, wool, od												
* Shirt, knit, od.												
* Sweater, high neck												
* Trousers, field, cotton, od												
* Undershirt & Drawers, winter.												
FOOTGEAR												
* Boots, combat, tropical; w/1 pr. socks, wool, cushion sole; 1 pr. insoles, ventilating												
* Boots, knee wader.												
Boots, service, combat, russet, OR Shoes, service; w/1 pr. socks, wool, cushion sole												
HANDGEAR												
None												
HEADGEAR												
Cap, herringbone twill												
* Helmet, sun												
SLEEPING EQUIPMENT												
* Blanket, lightweight.												
Blanket, wool, od.												
OTHER ITEM												
Anti-insect (See Introduction).												

- Item usually required in this month
 * Item usually required in indicated months, but must be procured specially because "discretionary" in this zone.

II 5/25/50

CENTRAL AFRICA II-1 (3,000 to 6,000 ft.)

- Jacket, field, w/hood, jacket & overcoat.
- * Jacket, wool, od
- Jacket & Trousers, lightweight special.
- Poncho, lightweight, od.
- * Raincoat
- Shirt & Trousers, cotton, khaki.
- * Shirt, flannel, od, & Trousers, field, wool, od
- * Shirt, knit, od.
- * Sweater, high neck
- * Trousers, field, cotton, od
- * Undershirt & Drawers, winter.

- * Boots, combat, tropical; w/1 pr. socks, wool, cushion sole; 1 pr. insoles, ventilating
- * Boots, knee wader.
- Boots, service, combat, russet, OR Shoes, service; w/1 pr. socks, wool, cushion sole

None

Cap, herringbone twill

* Helmet, sun

* Blanket, lightweight.
Blanket, wool, od.

Anti-insect (See Introduction)

[illegible]

11 5/25/50

CLOTHING REQUIREMENTS

CENTRAL AFRICA II - I (above 6,000 ft.)

BODY CLOTHING

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jacket, field, w/hood, jacket & overcoat.												
* Jacket, wool, od												
Jacket & Trousers, lightweight special.												
Poncho, lightweight, od.												
* Raincoat												
Shirt & Trousers, cotton, khaki.												
* Shirt, flannel, od, & Trousers, field, wool, od												
* Shirt, knit, od.												
* Sweater, high neck												
* Trousers, field, cotton, od												
* Undershirt & Drawers, winter.												

FOOTGEAR

* Boots, combat, tropical; w/1 pr. socks, wool, cushion sole; 1 pr. insoles, ventilating												
* Boots, knee wader.												
Boots, service, combat, russet, OR Shoes, service; w/1 pr. socks, wool, cushion sole												

HANDGEAR

None

HEADGEAR

Cap, herringbone twill												
* Helmet, sun												

SLEEPING EQUIPMENT

* Blanket, lightweight.												
Blanket, wool, od.												

OTHER ITEM

Anti-insect (See Introduction).												
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Item usually required in this month

* Item usually required in indicated months, but must be procured specially because "discretionary" in this zone.

11 5/25/50

CENTRAL AFRICA II-2 (below 4,500 ft.)

- Jacket, field, w/hood, jacket & overcoat.
- * Jacket, wool, od
- Jacket & Trousers, lightweight special.
- Poncho, lightweight, od.
- * Raincoat
- Shirt & Trousers, cotton, khaki.
- * Shirt, flannel, od, & Trousers, field, wool, od
- * Shirt, knit, od.
- * Sweater, high neck
- * Trousers, field, cotton, od
- * Undershirt & Drawers, winter.

- * Boots, combat, tropical; w/1 pr. socks, wool, cushion sole; 1 pr. insoles, ventilating
- * Boots, knee wader.
- Boots, service, combat, russet, OR Shoes, service; w/1 pr. socks, wool, cushion sole

None

Cap, herringbone twill

* Helmet, sun

* Blanket, lightweight.
Blanket, wool, od.

Anti-insect (See Introduction)

[illegible]

* Item usually required in indicated months, but must be procured specially because "discretionary" in this zone.

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CENTRAL AFRICA II-2 (7,000 to 10,000 ft.)

- Jacket, field, w/hood, jacket & overcoat.
- * Jacket, wool, od
- Jacket & Trousers, lightweight special.
- Poncho, lightweight, od.
- * Raincoat
- Shirt & Trousers, cotton, khaki.
- * Shirt, flannel, od, & Trousers, field, wool, od
- * Shirt, knit, od.
- * Sweater, high neck
- * Trousers, field, cotton, od
- * Undershirt & Drawers, winter.

- * Boots, combat, tropical; w/1 pr. socks, wool, cushion sole; 1 pr. insoles, ventilating
- * Boots, knee wader.
- Boots, service, combat, russet, OR Shoes, service; w/1 pr. socks, wool, cushion sole

None

Cap, herringbone twill

* Helmet, sun

* Blanket, lightweight.
Blanket, wool, od.

Anti-insect (See Introduction)

[illegible]

11 5/25/50

CLOTHING REQUIREMENTS

CENTRAL AFRICA II-3 (below 2,000 ft.)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BODY CLOTHING												
Jacket, field, w/hood, jacket & overcoat.												
* Jacket, wool, od.												
Jacket & Trousers, lightweight special.												
Poncho, lightweight, od.												
* Raincoat												
Shirt & Trousers, cotton, khaki.												
* Shirt, flannel, od, & Trousers, field, wool, od.												
* Shirt, knit, od.												
* Sweater, high neck												
* Trousers, field, cotton, od.												
* Undershirt & Drawers, winter.												
FOOTGEAR												
* Boots, combat, tropical; w/1 pr. socks, wool, cushion sole; 1 pr. insoles, ventilating.												
* Boots, knee wader.												
Boots, service, combat, russet, OR Shoes, service; w/1 pr. socks, wool, cushion sole.												
HANDGEAR												
None												
HEADGEAR												
Cap, herringbone twill.												
* Helmet, sun.												
SLEEPING EQUIPMENT												
* Blanket, lightweight.												
Blanket, wool, od.												
OTHER ITEM												
Anti-insect (See Introduction).												

■ Item usually required in this month
 * Item usually required in indicated months, but must be procured specially because "discretionary" in this zone.

11 5/25/50

CENTRAL AFRICA II-3 (2,000 to 5,000 ft.)

- Jacket, field, w/hood, jacket & overcoat.
- * Jacket, wool, od
- Jacket & Trousers, lightweight special.
- Poncho, lightweight, od.
- * Raincoat
- Shirt & Trousers, cotton, khaki.
- * Shirt, flannel, od, & Trousers, field, wool, od
- * Shirt, knit, od.
- * Sweater, high neck
- * Trousers, field, cotton, od
- * Undershirt & Drawers, winter.

- * Boots, combat, tropical; w/1 pr. socks, wool, cushion sole; 1 pr. insoles, ventilating
- * Boots, knee wader.
- Boots, service, combat, russet, OR Shoes, service; w/1 pr. socks, wool, cushion sole

None

Cap, herringbone twill

* Helmet, sun

* Blanket, lightweight.
Blanket, wool, od.

Anti-insect (See Introduction)

[illegible]

11 5/25/50

CLOTHING REQUIREMENTS

CENTRAL AFRICA II-3 (above 5,000 ft.)

BODY CLOTHING

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jacket, field, w/hood, jacket & overcoat.												
* Jacket, wool, od												
Jacket & Trousers, lightweight special.												
Poncho, lightweight, od.												
* Raincoat												
Shirt & Trousers, cotton, khaki.												
* Shirt, flannel, od, & Trousers, field, wool, od												
* Shirt, knit, od.												
* Sweater, high neck												
* Trousers, field, cotton, od												
* Undershirt & Drawers, winter.												

FOOTGEAR

* Boots, combat, tropical; w/1 pr. socks, wool, cushion sole; 1 pr. insoles, ventilating												
* Boots, knee wader.												
Boots, service, combat, russet, OR Shoes, service; w/1 pr. socks, wool, cushion sole												

HANDGEAR

None

HEADGEAR

Cap, herringbone twill												
* Helmet, sun												

SLEEPING EQUIPMENT

* Blanket, lightweight.												
Blanket, wool, od.												

OTHER ITEM

Anti-insect (See Introduction).												
--	--	--	--	--	--	--	--	--	--	--	--	--

- Item usually required in this month
 * Item usually required in indicated months, but must be procured specially because "discretionary" in this zone.

11 5/25/50

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(In addition, each Almanac is given special
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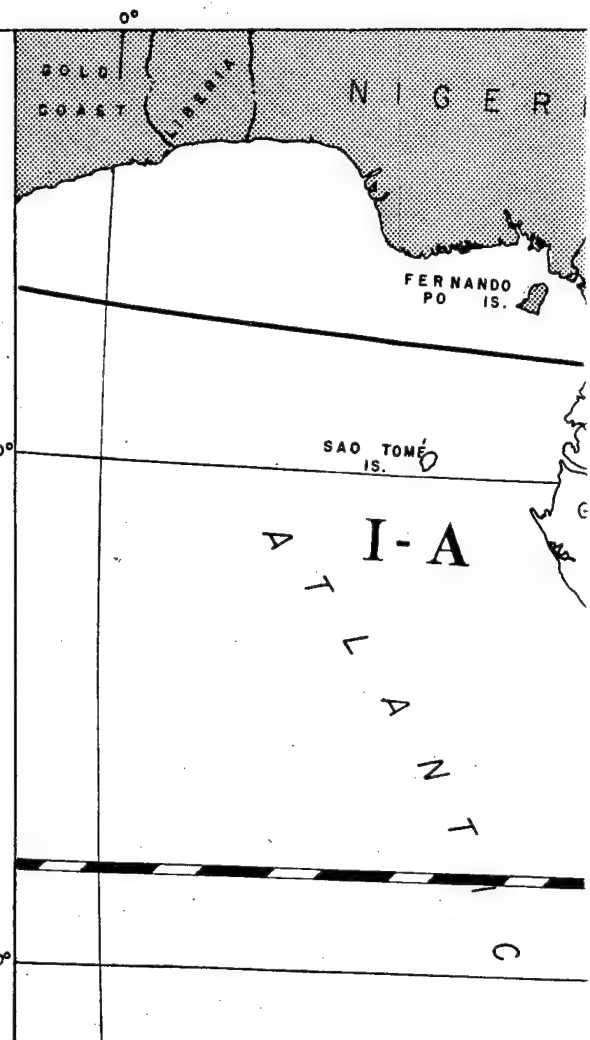
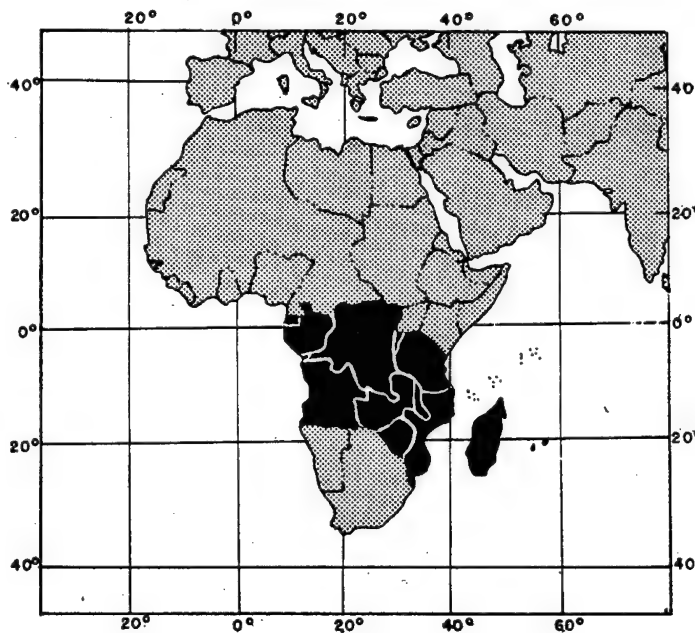
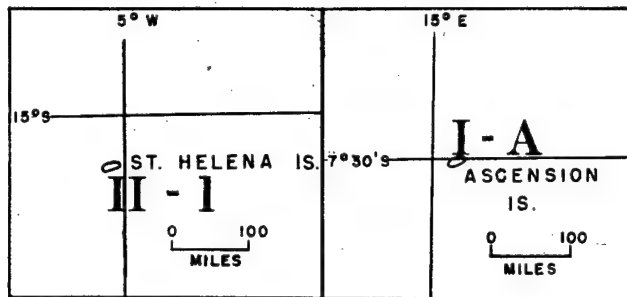
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(Attn: Dr. Black)

RESTRICTED-SECURITY INFORMATION

RESTRICTED-SECURITY INFORMATION





CLOTHING ALMANAC NO. 20

CENTRAL AFRICA

CLOTHING REQUIREMENT AREAS

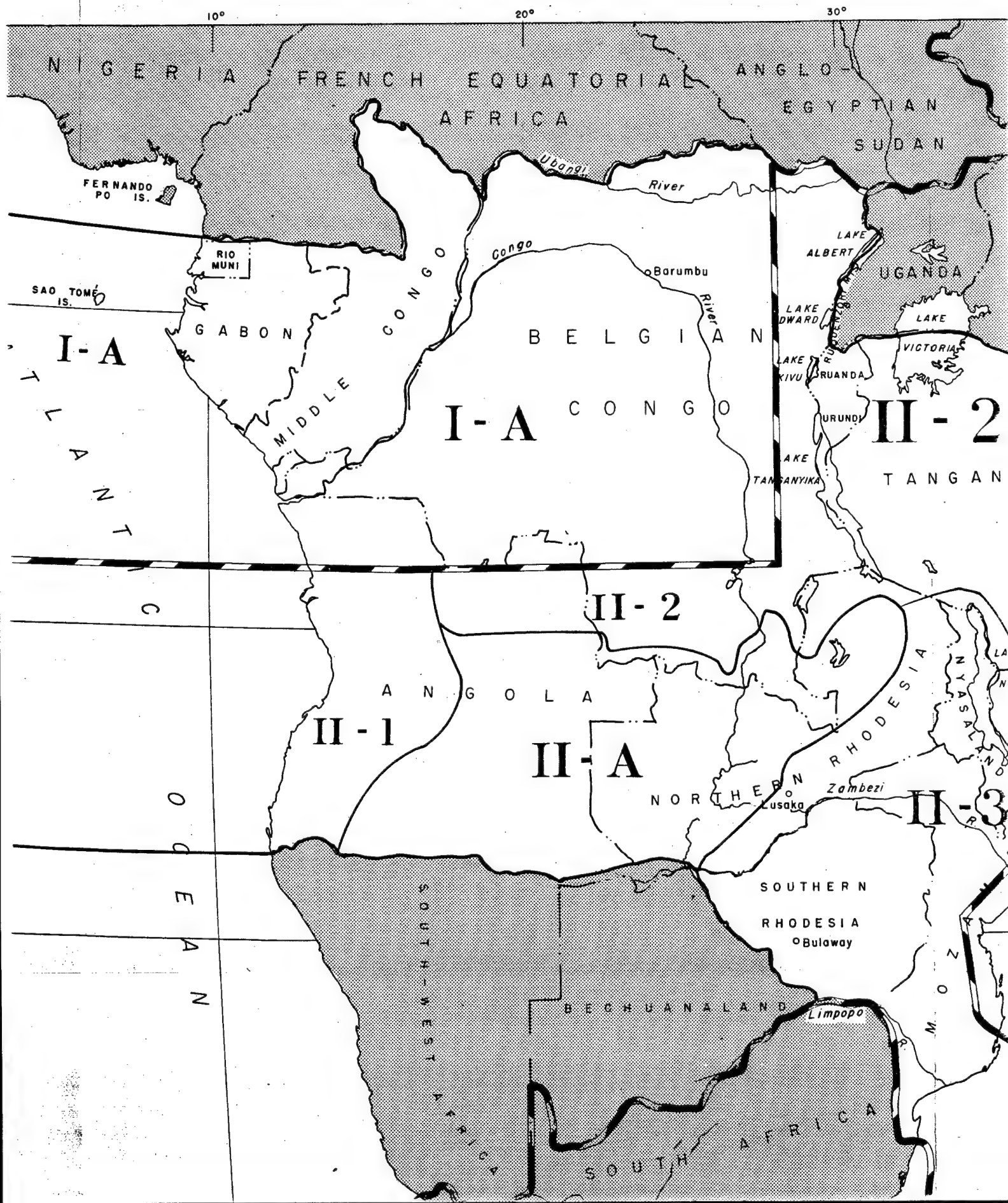
Roman numerals refer to major Clothing Allowance Zones
 Arabic numbers refer to mountain areas
 Letters refer to nonmountain areas

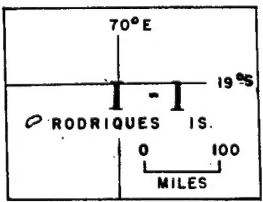
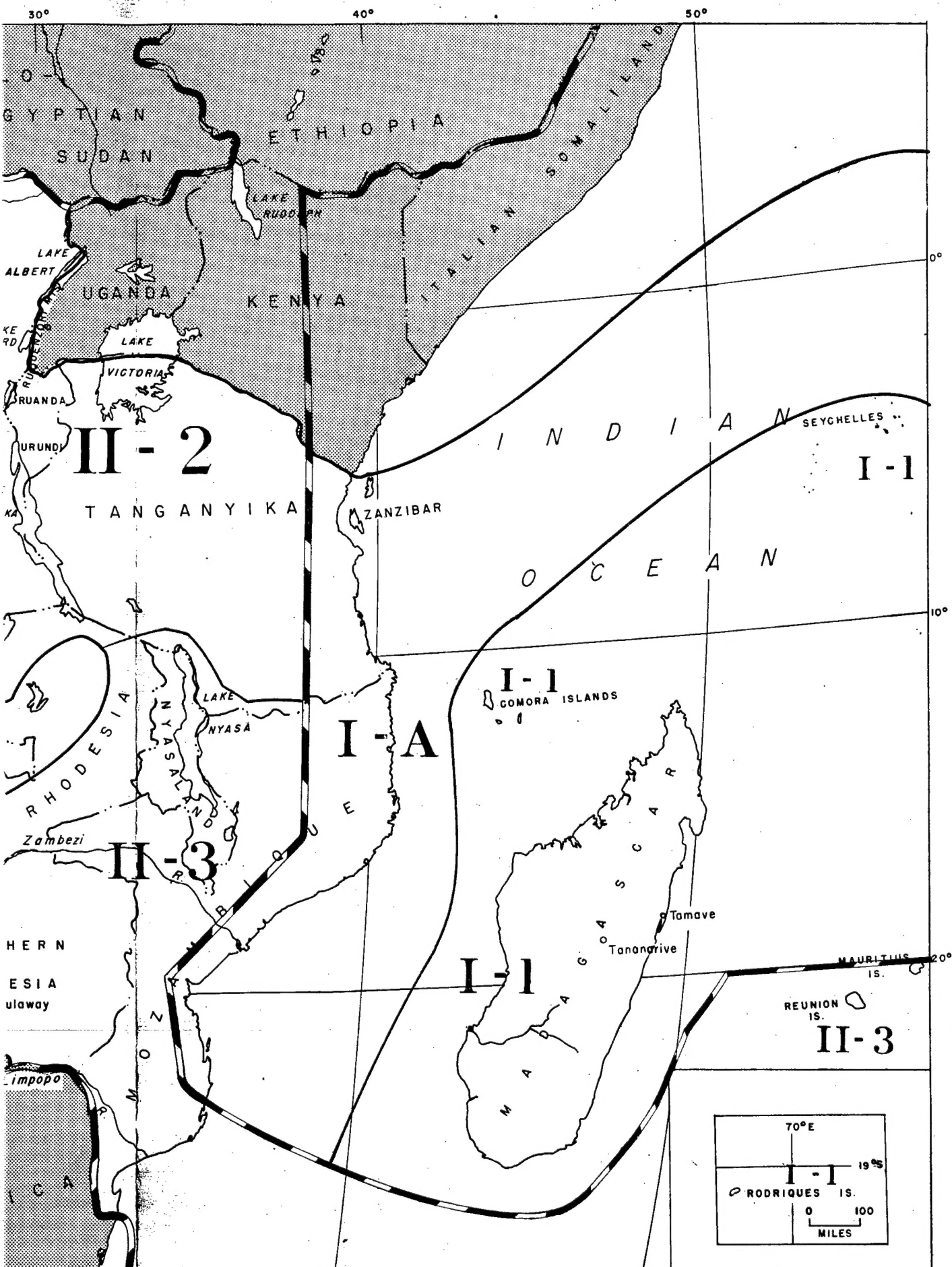
 Clothing Allowance Zones
 Clothing Requirement Areas

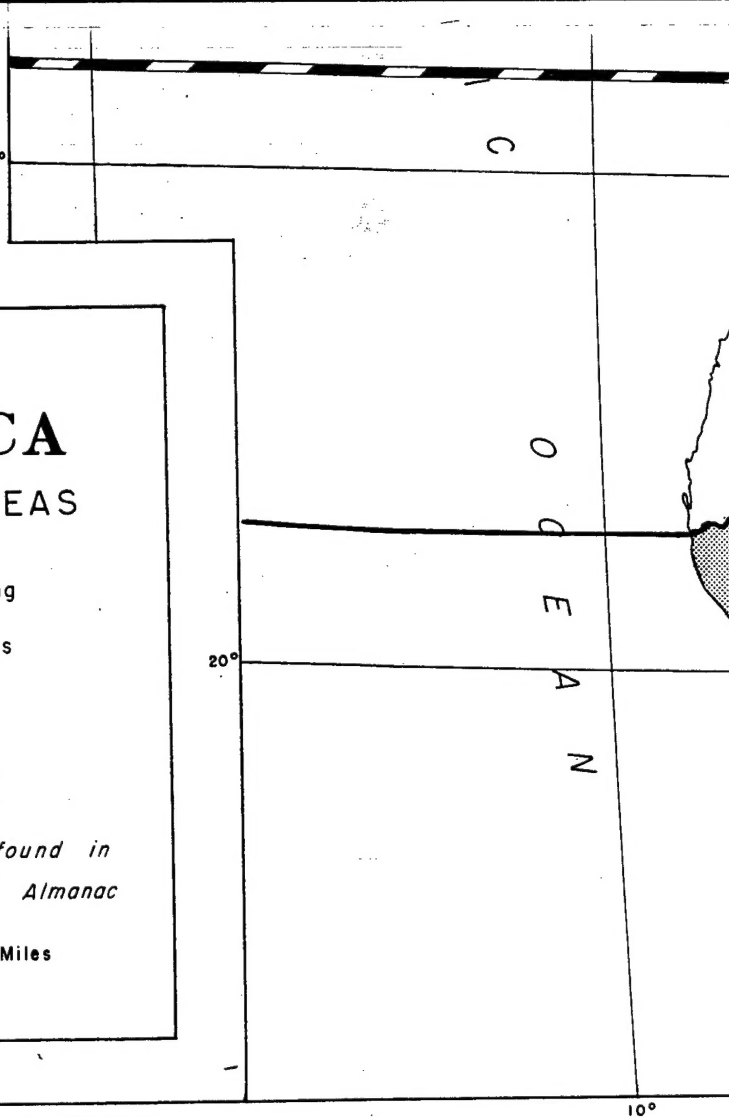
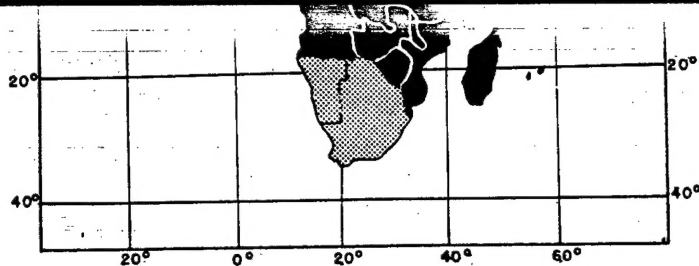
Clothing Requirements for each area are found in the corresponding table of the Clothing Almanac

0 200 400 600 Miles

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CLOTHING ALMANAC NO. 20

CENTRAL AFRICA

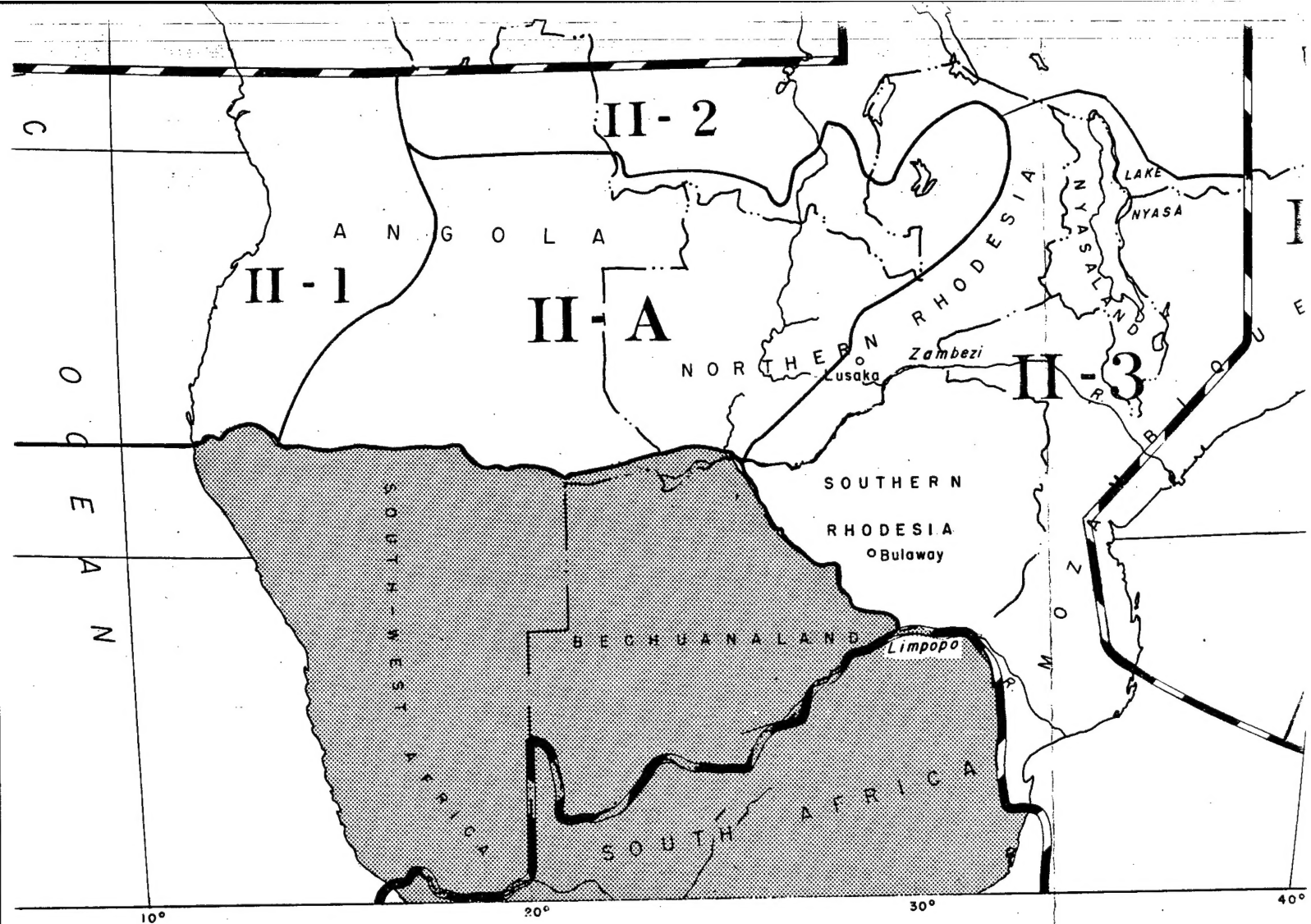
CLOTHING REQUIREMENT AREAS

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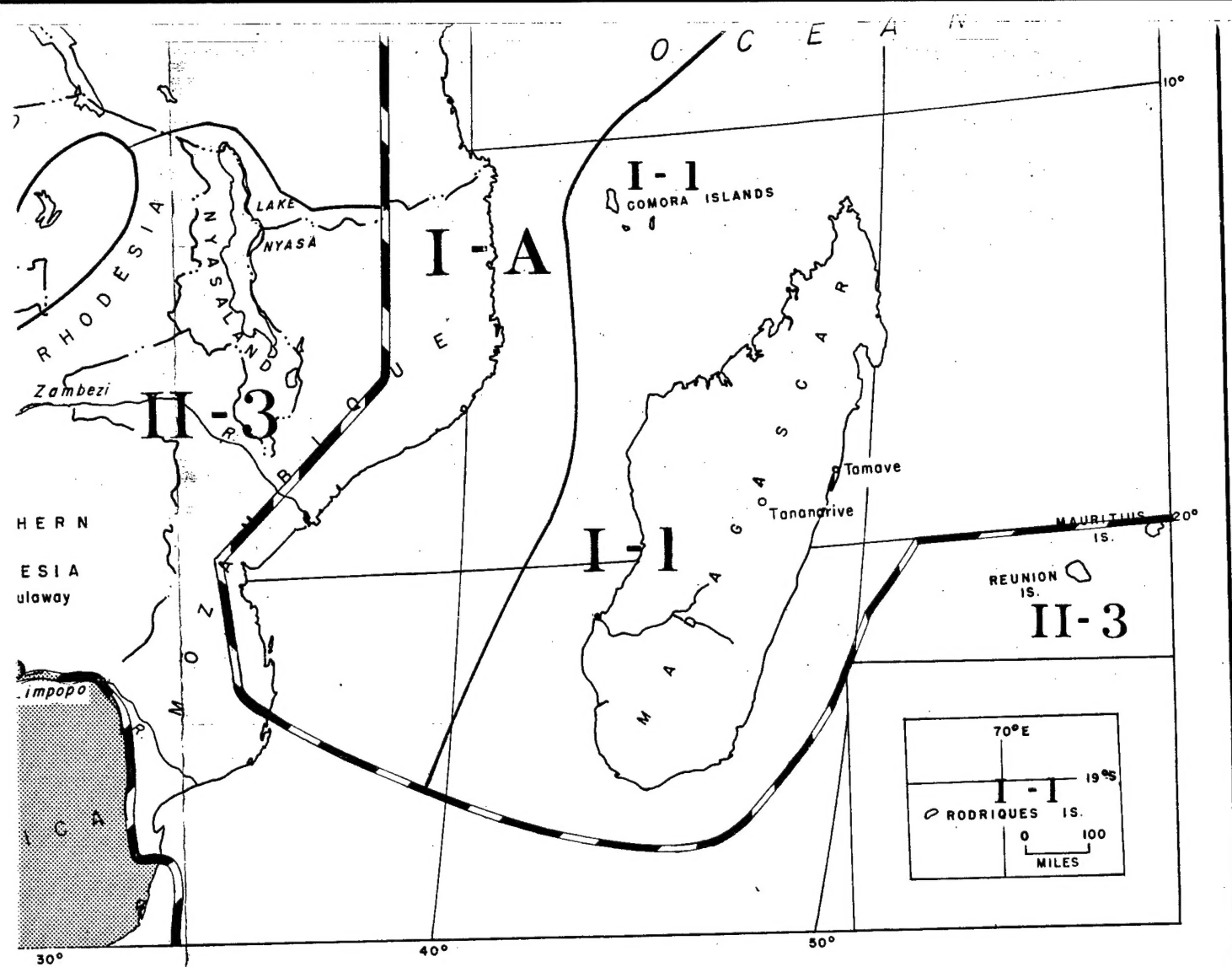
 Clothing Allowance Zones
 Clothing Requirement Areas

Clothing Requirements for each area are found in the corresponding table of the Clothing Almanac

0 200 400 600 Miles



(5)



(6)

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